

## PATENT ABSTRACTS OF JAPAN

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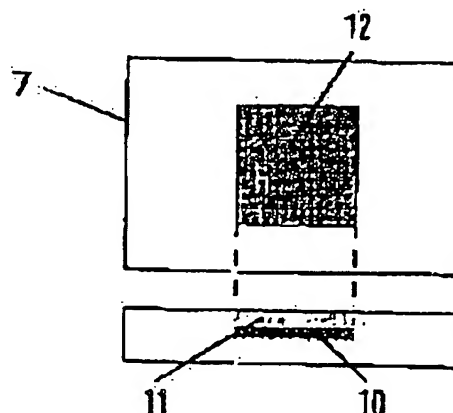
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### (54) MANUFACTURE OF p-TYPE GALLIUM NITRIDE COMPOUND SEMICONDUCTOR

#### (57)Abstract:

PROBLEM TO BE SOLVED: To improve the low-resistance carrier concentration of a gallium nitride compound semiconductor doped with a p-type impurity by heat-treating the semiconductor in the presence of a metal or alloy having a hydrogen occluding ability.

SOLUTION: A GaN compound semiconductor 10 and a metal or alloy 11, having a hydrogen occluding ability, are put on top of a sample base. Then a groove 12 for sample which mutually holds the conductor 10 and metal or alloy 11 in a contacting state is provided. At heat treatment, the semiconductor 10 doped with a p-type impurity and the hydrogen occluding metal or alloy 1 are held in a superposedly contacting state. As the hydrogen occluding metal or alloy 11 are included, besides, Zr, single metals, such Ti and Ni, Mg, La, U, Pd, V, etc., and alloys, such as LaNi<sub>5</sub>, FeTi, Mg<sub>2</sub>Cu, TiCo, etc. Therefore, since a p-type gallium nitride ohmic contact can be easily formed, a p-type gallium nitride compound semiconductor containing carriers at a high concentration can be formed from a gallium nitride compound semiconductor doped with the p-type impurity.



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